METHOD AND SYSTEM FOR ULTRASONIC TAGGING OF FLUORESCENCE

ABSTRACT

[0052] A method and system for localization of fluorescence in a scattering medium such as a biological tissue are provided. In comparison to other optical imaging techniques, this disclosure provides for improved spatial resolution, decreased computational time for reconstructions, and allows anatomical and functional imaging simultaneously. The method including the steps of illuminating the scattering medium with an excitation light to excite the fluorescence; modulating a portion of the emitted light from the fluorescence within the scattering medium using an ultrasonically induced variation of material properties of the scattering medium such as the refractive index; detecting the modulated optical signal at a surface of the scattering medium; and reconstructing a spatial distribution of the fluorescence in the scattering medium from the detected signal.